

Tech Data, Please

David L. Gallop



Tech Data Rights, Competition, and Affordable Sustainment

The operations and sustainment (O&S) phase costs for a weapon system often exceed 50 percent of the system's life cycle cost. This makes O&S costs a prime target for affordability initiatives. By introducing competition into the procurement of logistics support, spares, and upgrades to systems, experts believe we can achieve 15-percent cost reduction, compared with a sole-source procurement of the same products and services. For example, the Army expects to achieve O&S cost savings by using contractor-developed tech data in a full and open competition of M4 carbine spare parts. Government control of tech data and computer software (usually through assertion of the appropriate license rights) enables competition in the O&S phase but requires planning in the pre-solicitation phase of the program.

Gallop is a professor of program management at DAU. He has 19 years of acquisition management experience in government and private industry.

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE OCT 2011		2. REPORT TYPE		3. DATES COVERED 00-00-2011 to 00-00-2011	
4. TITLE AND SUBTITLE Tech Data, Please				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Defense Acquisition University, Defense AT&L, 9820 Belvoir Road, Fort Belvoir, VA, 22060-5565				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 3	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

The GAO found that the lack of technical data rights has limited program managers' (PMs') flexibility to achieve cost savings in the O&S phase through competition. Unless PMs assess the benefits of and secure the rights to tech data early in the weapon system acquisition process, when they have the greatest leverage to negotiate, they may face difficulty obtaining the tech data to reduce O&S costs through competition or depot maintenance.

When the Air Force purchased cowlings for the Airborne Warning and Control System (AWACS) aircraft, it did so on a noncompetitive, sole-source basis. The Defense Contract Management Agency recommended that the program office compete the cowlings, because the original equipment manufacturer's proposed price was not fair and reasonable and because another potential source for the part was available. Despite the recommendation, however, the Air Force said it "lacked the technical data to compete the purchase."

Since government tech data rights have costs and may have limitations, the program manager must have a tech data plan as part of the acquisition strategy that considers the benefits (affordability in the O&S phase), as well as the costs and limitations. The PM can make technical decisions that improve the utility of tech data obtained early in the life cycle, rather than pay a premium later in the life cycle.

Technical Planning Considerations

The Long Endurance Multi-Intelligence Vehicle (LEMV) program aggressively pursued tech data rights under their other transactions authority (OTA). The government obtained special license rights that equate to Government Purpose Rights for all deliverable tech data and computer software, to include contractor-developed items prior to the OTA. This provides the PM with a strong basis for competition when the program transitions to a Federal Acquisition Regulation-based contract at Milestone B and beyond. This is an excellent example of managing the technical data as part of a tech data strategy to improve competition and affordability later in the life cycle.

During pre-solicitation, PMs can take two technical approaches to the system that can maximize the utility of tech data to achieve O&S affordability through competition. **Have an open system architecture (OSA)** and **design for modularity**. An OSA uses interface specifications maintained by open, public consensus. Modularity is the degree to which a weapon system is made up of relatively independent but interlocking components. If the goal is to maximize the

competitive environment in O&S, the perfect system would have no proprietary interfaces, 100-percent modularity and all of the modules would be commodities (quality is not dependent on the manufacturer). Since this "perfect system" is uncommon, PMs need to focus their tech data rights assessments on components that will provide the greatest benefit from competition later in the life cycle.

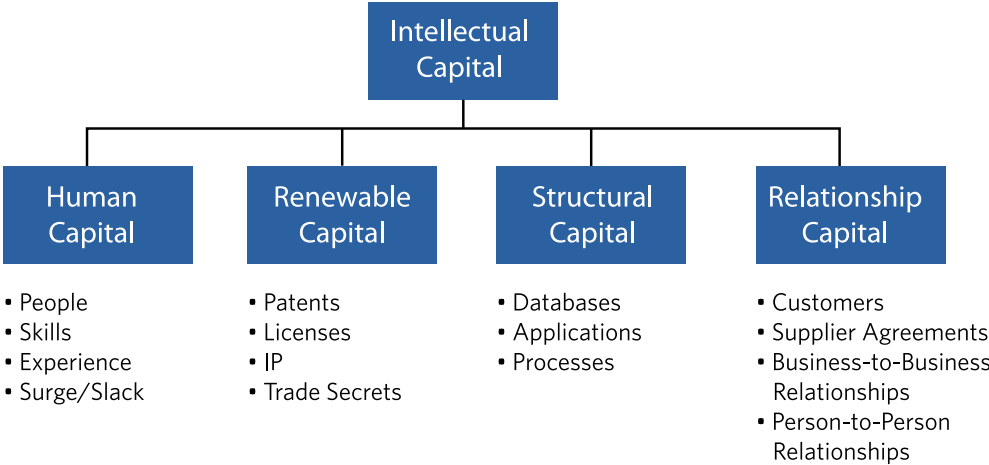
OSA and modularity allow the program manager to focus the tech data rights assertion decision on the nonstandard interfaces and the cost-driver components. They facilitate the identification of tech data required to sustain, integrate, and meet user requirements. The program manager can then use economic modeling to weigh the investment of asserting tech data rights against the potential savings through competition. This focused approach to asserting tech data supports the system's business case analysis. It also communicates the government's intentions for the tech data to industry more effectively than a broad system approach—such as unlimited rights to all data.

Government control of tech data is a powerful tool for competition in the costly O&S phase of a program. Its utility is amplified if the technology planning considers OSA and modularity. OSA and modularity allows the program manager to be precise in the tech data rights the government asserts. However, government control of tech data does not guarantee competition or capability that meets requirements. Government control may not be appropriate based on the tech data's dependency on the contractor's intellectual capital (IC).

Limitations of Tech Data for Competition

Tech data is intellectual property (IP). IP is not the same as IC. When you place a company on contract for product development, you are tapping into that company's (or team of companies') intellectual capital. Tech data are an important part of the IC equation. However, it is only one part. All of the components of intellectual capital are interrelated and necessary to deliver, maintain, sustain, adapt, and improve capability. When

Figure 1. Intellectual Capital Components



Adapted from "Show Me the Money" by Phillips and Phillips

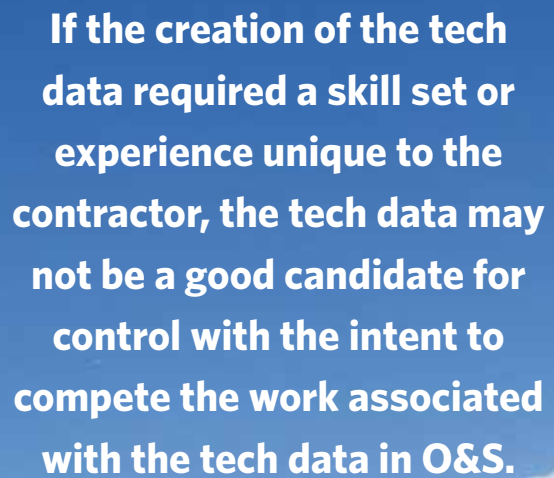
you remove the tech data from the other components of the company's intellectual capital, the tech data may have reduced value and impact. There are four components of intellectual capital: human capital, renewable capital, structural capital, and relationship capital.

Human capital, also known as individual capital, is the contractor's collection of personnel expertise and experience. Without that expertise and experience, there is no tech data. Companies transform individual experiences and expertise into new, shared knowledge. Companies recruit and retain talent critical to profitability and growth. They align expertise against work on-hand to maximize direct charges and minimize indirect costs. In fact, a great deal of management focus is on maintaining the right bench of talent and organizing that talent into project teams and adjusting the bench over the entire product life cycle.

Compared to the government, companies have tremendous agility to surge and slack their workforce for cost effectiveness. They match the work required at the point of the product life cycle with the workforce experience and expertise. The successful application of tech data in the program's acquisition strategy will need to consider the dependency of the tech data on the contractor's human capital. If the creation of the tech data required a skill set or experience unique to the contractor, the tech data may not be a good candidate for government control with the intent to compete the work associated with the tech data in O&S. The program management office may not have the skills to interpret the tech data to adequately describe the needs in a solicitation. Potential bidders may not exist or be able to deliver the capability.

Renewable capital is the contractor's intellectual properties. These include patents, licenses, and technical data. Renewable capital leads to marketable innovations—products, services, and technology. It is the connection between patents, licenses, and technical data that makes the transfer of tech data outside the company a risk to the company's competitiveness. Naturally, companies will defend and protect the tech data. There may be dependencies between the tech data under government control (through the assertion of licensing rights) and company patents and trade secrets. Not all potential bidders later in the life cycle can replicate those patents and trade secrets.

Structural capital is the contractor's work processes. The output of these work processes is documentation. The contractor may provide the government with tech data in a form that is incomplete, ambiguous, or of limited utility because of dependencies between the tech data and the elements of structural capital. For example, the contractor may provide mechanical drawings as tech data in Adobe Acrobat format. These drawings may need to be in SolidWorks format to be useful to future bidders. The program manager developing an acquisition strategy must consider these dependencies by requiring the tech data in a useful format, have the appropriate applications



If the creation of the tech data required a skill set or experience unique to the contractor, the tech data may not be a good candidate for control with the intent to compete the work associated with the tech data in O&S.

and databases, and plan to have access to people with the knowledge and skills to use that data in future solicitations.

The final component of intellectual capital is relationship capital. Relationship capital is the contractor's network of resources—their contacts and supplier relationships. The government may not fully appreciate this component of intellectual capital because it is often running in the background of the contractual relationship. Relationship capital includes access to information such as changes in raw materials and parts availability, alternate sources of supply, etc. It also includes the contractor's unique network of influence with suppliers, program advocates, and other government customers. Those relationships can often be replaced but not always duplicated.

The program manager must consider the limitations of tech data at each milestone and adjust the tech data plan accordingly. It requires a great deal of forecasting to improve the likelihood that the tech data the government acquires will be available, useable in a solicitation, and that real competition will exist in the future.

Conclusion

Government control of tech data and software, combined with OSA and modularity, can reduce O&S costs through competition. The program manager must consider the value of tech data rights in relation to OSA and modularity during technical planning. In most cases, the program manager will need to be selective in the assertion of tech data rights. At subsequent decision points, the program manager must consider the dependencies between the tech data and the contractor's intellectual capital. This may require adjustments in the skills within the PMO over time and a constant assessment of the competitive environment to maximize efficiency and achieve cost reductions through competition.

The author can be reached at david.gallop@dau.mil.